

SeqListing.txt  
SEQUENCE LISTING

<110> Zhu, Zhenping

<120> Bispecific Antibodies That Bind to VEGF Receptors

<130> 11245/48503

<140> 10/520,026

<141> 2004-12-27

<150> PCT/US02/041372

<151> 2002-12-24

<150> PCT/US02/20332

<151> 2002-06-26

<150> US 60/301,299

<151> 2001-06-26

<160> 137

<170> wordPerfect 8.0 for windows

<210> 1

<211> 10

<212> PRT

<213> Mouse

<400> 1

Gly Phe Asn Ile Lys Asp Phe Tyr Met His  
1 5 10

<210> 2

<211> 17

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<213> Mouse

<400> 2

Trp Ile Asp Pro Glu Asn Gly Asp Ser Gly Tyr Ala Pro Lys Phe Gln Gly  
1 5 10 15

<210> 3

<211> 8

<212> PRT

<213> Mouse

<400> 3

Tyr Tyr Gly Asp Tyr Glu Gly Tyr  
1 5

<210> 4

<211> 10

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<213> Mouse

<400> 4

Ser Ala Ser Ser Ser val Ser Tyr Met His  
1 5 10

## SeqListing.txt

<210> 5  
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Ser Thr Ser Asn Leu Ala Ser  
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Gln Gln Arg Ser Ser Tyr Pro Phe Thr  
 1 5

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Gln Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Val Gly Ser Gly Ala  
 1 5 10 15  
 Ser Val Lys Leu Ser Cys Thr Thr Ser Gly Phe Asn Ile Lys Asp Phe  
 20 25 30  
 Tyr Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile  
 35 40 45  
 Gly Trp Ile Asp Pro Glu Asn Gly Asp Ser Gly Tyr Ala Pro Lys Phe  
 50 55 60  
 Gln Gly Lys Ala Thr Met Thr Ala Asp Ser Ser Asn Thr Ala Tyr  
 65 70 75 80  
 Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Asn Ala Tyr Tyr Gly Asp Tyr Glu Gly Tyr Trp Gly Gln Gly Thr Thr  
 100 105 110  
 Val Thr Val Ser Ser  
 115

<210> 8  
 <211> 108  
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<400> 8

Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly  
 1 5 10 15  
 Glu Lys Val Thr Ile Thr Cys Ser Ala Ser Ser Ser Val Ser Tyr Met  
 20 25 30  
 His Trp Phe Gln Gln Lys Pro Gly Thr Ser Pro Lys Leu Trp Ile Tyr  
 35 40 45  
 Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser  
 50 55 60  
 Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Met Glu Ala Glu  
 65 70 75 80  
 Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Arg Ser Ser Tyr Pro Phe Thr  
 85 90 95

Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys Arg Ala  
 100 105

<210> 9

<211> 30

<212> DNA

<213> Mouse

<400> 9

ggc ttc aac att aaa gac ttc tat atg cac 30  
 Gly Phe Asn Ile Lys Asp Phe Tyr Met His  
 1 5 10

<210> 10

<211> 51

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tgg att gat cct gag aat ggt gat tct ggt tat gcc ccg aag ttc cag 48  
 Trp Ile Asp Pro Glu Asn Gly Asp Ser Gly Tyr Ala Pro Lys Phe Gln Gly  
 1 5 10 15  
 ggc 51

<210> 11

<211> 24

<212> DNA

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<400> 11

tac tat ggt gac tac gaa ggc tac 24  
 Tyr Tyr Gly Asp Tyr Glu Gly Tyr  
 1 5

<210> 12

<211> 30

<212> DNA

<213> Mouse

<400> 12

agt gcc agc tca agt gta agt tac atg cac 30  
 Ser Ala Ser Ser Ser Val Ser Tyr Met His  
 1 5 10

<210> 13

<211> 21

<212> DNA

<213> Mouse

<400> 13

agc aca tcc aac ctg gct tct 21  
 Ser Thr Ser Asn Leu Ala Ser  
 1 5

<210> 14

<211> 27

<212> DNA

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## SeqListing.txt

<400> 14

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Gln Gln Arg Ser Ser Tyr Pro Phe Thr  
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27

<210> 15

<211> 351

## <212> DNA

## <213> Mouse

**<400> 15**

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**<211> 324**

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## <213> Mouse

**<400> 16**

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Asp	Ile	Glu	Leu	Thr	Gln	Ser	Pro	Ala	Ile	Met	Ser	Ala	Ser	Pro	Gly	48
1				5					10					15		
gag	aag	gtc	acc	ata	acc	tgc	agt	gcc	agc	tca	agt	gta	agt	tac	atg	
Glu	Lys	Val	Thr	Ile	Thr	Cys	Ser	Ala	Ser	Ser	Ser	Val	Ser	Tyr	Met	96
			20					25					30			
cac	tgg	ttc	cag	cag	aag	cca	ggc	act	tct	ccc	aaa	ctc	tgg	att	tat	
His	Trp	Phe	Gln	Gln	Lys	Pro	Gly	Thr	Ser	Pro	Lys	Leu	Trp	Ile	Tyr	144
		35					40					45				
agc	aca	tcc	aac	ctg	gct	tct	gga	gtc	cct	gct	cgc	ttc	agt	ggc	agt	
Ser	Thr	Ser	Asn	Leu	Ala	Ser	Gly	Val	Pro	Ala	Arg	Phe	Ser	Gly	Ser	192
	50					55					60					
gga	tct	ggg	acc	tct	tac	tct	ctc	aca	atc	agc	cga	atg	gag	gct	gaa	
Gly	Ser	Gly	Thr	Ser	Tyr	Ser	Leu	Thr	Ile	Ser	Arg	Met	Glu	Ala	Glu	240
65				70					75					80		
gat	gct	gcc	act	tat	tac	tgc	cag	caa	agg	agt	agt	tac	cca	ttc	acg	
Asp	Ala	Ala	Thr	Tyr	Tyr	Cys	Gln	Gln	Arg	Ser	Ser	Tyr	Pro	Phe	Thr	288

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## SeqListing.txt

ttc ggc tcg ggg acc aag ctg gaa ata aaa cgg gcg 95 324  
 Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys Arg Ala  
 100 105

<210> 17  
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<400> 17

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 1 5 10 15

<210> 18  
 <211> 45  
 <212> DNA  
 <213> Mouse

<400> 18

ggtggaggcg gttcaggcgg aggtggctct ggcggtggcg gatcg 45

<210> 19  
 <211> 10  
 <212> PRT  
 <213> Mouse

<400> 19

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 1 5 10

<210> 20  
 <211> 15  
 <212> DNA  
 <213> Mouse

<400> 20

ggtggaggcg gttca 15

<210> 21  
 <211> 17  
 <212> PRT  
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<400> 21

Trp Ile Asp Pro Glu Asn Gly Asp Ser Asp Tyr Ala Pro Lys Phe Gln Gly  
 1 5 10 15

<210> 22  
 <211> 117  
 <212> PRT  
 <213> Mouse

<400> 22

Gln Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Val Gly Ser Gly Ala  
 1 5 10 15

## SeqListing.txt

Ser Val Lys Leu Ser Cys Thr Thr Ser Gly Phe Asn Ile Lys Asp Phe  
 20 25 30  
 Tyr Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile  
 35 40 45  
 Gly Trp Ile Asp Pro Glu Asn Gly Asp Ser Asp Tyr Ala Pro Lys Phe  
 50 55 60  
 Gln Gly Lys Ala Thr Met Thr Ala Asp Ser Ser Asn Thr Ala Tyr  
 65 70 75 80  
 Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Asn Ala Tyr Tyr Gly Asp Tyr Glu Gly Tyr Trp Gly Gln Gly Thr Thr  
 100 105 110  
 Val Thr Val Ser Ser  
 115

<210> 23  
 <211> 106  
 <212> PRT  
 <213> Mouse

<400> 23

Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly  
 1 5 10 15  
 Glu Lys Val Thr Ile Thr Cys Ser Ala Ser Ser Ser Val Ser Tyr Met  
 20 25 30  
 His Trp Phe Gln Gln Lys Pro Gly Thr Ser Pro Lys Leu Trp Ile Tyr  
 35 40 45  
 Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser  
 50 55 60  
 Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Met Glu Ala Glu  
 65 70 75 80  
 Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Arg Ser Ser Tyr Pro Phe Thr  
 85 90 95  
 Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
 100 105

<210> 24  
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<400> 24

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<210> 25  
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 <212> DNA  
 <213> Mouse

<400> 25

cag gtc aag ctg cag cag tct ggg gca gag ctt gtg ggg tca ggg gcc 48  
 Gln Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Val Gly Ser Gly Ala  
 1 5 10 15  
 tca gtc aaa ttg tcc tgc aca act tct ggc ttc aac att aaa gac ttc 96  
 Ser Val Lys Leu Ser Cys Thr Thr Ser Gly Phe Asn Ile Lys Asp Phe  
 20 25 30  
 tat atg cac tgg gtg aag cag agg cct gaa cag ggc ctg gag tgg att 144  
 Tyr Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile  
 35 40 45  
 gga tgg att gat cct gag aat ggt gat tct gat tat gcc ccg aag ttc 192

## SeqListing.txt

Gly	Trp	Ile	Asp	Pro	Glu	Asn	Gly	Asp	Ser	Asp	Tyr	Ala	Pro	Lys	Phe	
50						55				60						
cag	ggc	aag	gcc	acc	atg	act	gca	gac	tca	tcc	tcc	aac	aca	gcc	tac	240
Gln	Gly	Lys	Ala	Thr	Met	Thr	Ala	Asp	Ser	Ser	Ser	Asn	Thr	Ala	Tyr	
65					70					75					80	
ctg	cag	ctc	agc	agc	ctg	aca	tct	gag	gac	act	gcc	gtc	tat	tac	tgt	288
Leu	Gln	Leu	Ser	Ser	Leu	Thr	Ser	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	
				85					90					95		
aat	gca	tac	tat	ggg	gac	tac	gaa	ggc	tac	tgg	ggc	caa	ggg	acc	acg	336
Asn	Ala	Tyr	Tyr	Gly	Asp	Tyr	Glu	Gly	Tyr	Trp	Gly	Gln	Gly	Thr	Thr	
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gtc	acc	gtc	tcc	tca												351
Val	Thr	Val	Ser	Ser												
		115														

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<400> 26

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Asp	Ile	Glu	Leu	Thr	Gln	Ser	Pro	Ala	Ile	Met	Ser	Ala	Ser	Pro	Gly	
1				5					10					15		
gag	aag	gtc	acc	ata	acc	tgc	agt	gcc	agc	tca	agt	gta	agt	tac	atg	96
Glu	Lys	Val	Thr	Ile	Thr	Cys	Ser	Ala	Ser	Ser	Ser	Val	Ser	Tyr	Met	
			20					25					30			
cac	tgg	ttc	cag	cag	aag	cca	ggc	act	tct	ccc	aaa	ctc	tgg	att	tat	144
His	Trp	Phe	Gln	Gln	Lys	Pro	Gly	Thr	Ser	Pro	Lys	Leu	Trp	Ile	Tyr	
		35					40					45				
agc	aca	tcc	aac	ctg	gct	tct	gga	gtc	cct	gct	cgc	ttc	agt	ggc	agt	192
Ser	Thr	Ser	Asn	Leu	Ala	Ser	Gly	Val	Pro	Ala	Arg	Phe	Ser	Gly	Ser	
		50				55				60						
gga	tct	ggg	acc	tct	tac	tct	ctc	aca	atc	agc	cga	atg	gag	gct	gaa	240
Gly	Ser	Gly	Thr	Ser	Tyr	Ser	Leu	Thr	Ile	Ser	Arg	Met	Glu	Ala	Glu	
65					70					75					80	
gat	gct	gcc	act	tat	tac	tgc	cag	caa	agg	agt	agt	tac	cca	ttc	acg	288
Asp	Ala	Ala	Thr	Tyr	Tyr	Cys	Gln	Gln	Arg	Ser	Ser	Tyr	Pro	Phe	Thr	
				85					90					95		
ttc	ggc	tcg	ggg	acc	aag	ctg	gaa	ata	aaa							318
Phe	Gly	Ser	Gly	Thr	Lys	Leu	Glu	Ile	Lys							
			100					105								

<210> 27  
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<400> 27

Gln	Val	Lys	Leu	Gln	Gln	Ser	Gly	Ala	Glu	Leu	Val	Gly	Ser	Gly	Ala	
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Ser	Val	Lys	Leu	Ser	Cys	Thr	Thr	Ser	Gly	Phe	Asn	Ile	Lys	Asp	Phe	
			20					25					30			
Tyr	Met	His	Trp	Val	Lys	Gln	Arg	Pro	Glu	Gln	Gly	Leu	Glu	Trp	Ile	
		35					40					45				
Gly	Trp	Ile	Asp	Pro	Glu	Asn	Gly	Asp	Ser	Gly	Tyr	Ala	Pro	Lys	Phe	
	50					55				60						
Gln	Gly	Lys	Ala	Thr	Met	Thr	Ala	Asp	Ser	Ser	Ser	Asn	Thr	Ala	Tyr	
65					70					75					80	
Leu	Gln	Leu	Ser	Ser	Leu	Thr	Ser	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	
				85					90					95		

## SeqListing.txt

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Asn Ala Tyr Tyr Gly Asp Tyr Glu Gly Tyr Trp Gly Gln Gly Thr Thr
100 105 110
Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
115 120 125
Gly Gly Gly Ser Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ser
130 135 140
Ala Ser Pro Gly Glu Lys Val Thr Ile Thr Cys Ser Ala Ser Ser Ser
145 150 155 160
Val Ser Tyr Met His Trp Phe Gln Gln Lys Pro Gly Thr Ser Pro Lys
165 170 175
Leu Trp Ile Tyr Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg
180 185 190
Phe Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg
195 200 205
Met Glu Ala Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Arg Ser Ser
210 215 220
Tyr Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys Arg Ala
225 230 235 240

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<210> 28  
 <211> 238  
 <212> PRT  
 <213> Mouse

<400> 28

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Gln Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Val Gly Ser Gly Ala
1 5 10 15
Ser Val Lys Leu Ser Cys Thr Thr Ser Gly Phe Asn Ile Lys Asp Phe
20 25 30
Tyr Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
35 40 45
Gly Trp Ile Asp Pro Glu Asn Gly Asp Ser Asp Tyr Ala Pro Lys Phe
50 55 60
Gln Gly Lys Ala Thr Met Thr Ala Asp Ser Ser Ser Asn Thr Ala Tyr
65 70 75 80
Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Asn Ala Tyr Tyr Gly Asp Tyr Glu Gly Tyr Trp Gly Gln Gly Thr Thr
100 105 110
Val Thr Val Ser Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
115 120 125
Gly Gly Gly Ser Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ser
130 135 140
Ala Ser Pro Gly Glu Lys Val Thr Ile Thr Cys Ser Ala Ser Ser Ser
145 150 155 160
Val Ser Tyr Met His Trp Phe Gln Gln Lys Pro Gly Thr Ser Pro Lys
165 170 175
Leu Trp Ile Tyr Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg
180 185 190
Phe Ser Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg
195 200 205
Met Glu Ala Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Arg Ser Ser
210 215 220
Tyr Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
225 230 235

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<213> Artificial Sequence  
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## SeqListing.txt

<223> Synthetic primer  
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 <211> 30  
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 <223> Synthetic primer  
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 <210> 31  
 <211> 52  
 <212> DNA  
 <213> Artificial Sequence  
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 <223> Synthetic primer  
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 <211> 36  
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 <223> signal  
 <400> 32  
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 <210> 33  
 <211> 19  
 <212> PRT  
 <213> Artificial Sequence  
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 <223> leader peptide  
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                   5                  10                  15  
 Val His Ser  
 <210> 34  
 <211> 32  
 <212> DNA  
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 <220>  
 <223> Synthetic primer

SeqListing.txt

<400> 34

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32

<210> 35

<211> 11

<212> PRT

<213> Mouse

<400> 35

Ser Gly Phe Asn Ile Lys Asp Thr Tyr Ile His  
1 5 10

<210> 36

<211> 17

<212> PRT

<213> Mouse

<400> 36

Gly Arg Ile Asp Pro Pro Asn Asp Asn Thr Lys Asp Pro Lys Phe Gln Gly  
1 5 10 15

<210> 37

<211> 7

<212> PRT

<213> Mouse

<400> 37

Pro Pro Phe Tyr Phe Asp Tyr  
1 5

<210> 38

<211> 11

<212> PRT

<213> Mouse

<400> 38

Lys Ala Ser Gln Asn Val Asp Thr Asn Val Ala  
1 5 10

<210> 39

<211> 7

<212> PRT

<213> Mouse

<400> 39

Ser Ala Ser Tyr Arg Tyr Ser  
1 5

<210> 40

<211> 9

<212> PRT

<213> Mouse

<400> 40

## SeqListing.txt

Gln Gln Tyr Asn Ser Phe Pro Tyr Thr  
 1 5

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 <212> PRT  
 <213> Mouse

<400> 41

Gln Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala  
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 Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr  
 20 25 30  
 Tyr Ile His Trp Val Lys Gln Ser Pro Glu Gln Gly Leu Glu Trp Ile  
 35 40 45  
 Gly Trp Ile Asp Pro Pro Asn Asp Asn Thr Lys Tyr Asp Pro Lys Phe  
 50 55 60  
 Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr  
 65 70 75 80  
 Met Gln Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Leu Pro Pro Phe Tyr Phe Asp Tyr Trp Gly His Gly Thr Thr Val  
 100 105 110  
 Thr Val Ser Ser  
 115

<210> 42  
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 <212> PRT  
 <213> Mouse

<400> 42

Asp Ile Glu Leu Thr Gln Ser Pro Lys Phe Met Ser Thr Ser Val Gly  
 1 5 10 15  
 Asp Arg Val Ser Val Thr Cys Lys Ala Ser Gln Asn Val Asp Thr Asn  
 20 25 30  
 Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Ala Leu Ile  
 35 40 45  
 Tyr Ser Ala Ser Tyr Arg Tyr Ser Gly Val Pro Asp Arg Phe Thr Gly  
 50 55 60  
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn Val Gln Ser  
 65 70 75 80  
 Glu Asp Leu Ala Glu Tyr Phe Cys Gln Gln Tyr Asn Ser Phe Pro Tyr  
 85 90 95  
 Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala  
 100 105

<210> 43  
 <211> 33  
 <212> DNA  
 <213> Mouse

<400> 43

tct ggc ttc aac att aaa gac acc tat ata cac  
 Ser Gly Phe Asn Ile Lys Asp Thr Tyr Ile His  
 1 5 10

33

<210> 44  
 <211> 51  
 <212> DNA

## SeqListing.txt

&lt;213&gt; Mouse

&lt;400&gt; 44

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Gly Arg Ile Asp Pro Pro Asn Asp Asn Thr Lys Asp Pro Lys Phe Gln Gly
1           5           10           15
cag 51

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&lt;210&gt; 45

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Mouse

&lt;400&gt; 45

```

cca ccc ttc tac ttt gac tac 21
Pro Pro Phe Tyr Phe Asp Tyr
1           5

```

&lt;210&gt; 46

&lt;211&gt; 33

&lt;212&gt; DNA

&lt;213&gt; Mouse

&lt;400&gt; 46

```

aag gcc agt cag aat gtg gat act aat gta gcc 33
Lys Ala Ser Gln Asn Val Asp Thr Asn Val Ala
1           5           10

```

&lt;210&gt; 47

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Mouse

&lt;400&gt; 47

```

tcg gca tcc tac cgg tac agt 21
Ser Ala Ser Tyr Arg Tyr Ser
1           5

```

&lt;210&gt; 48

&lt;211&gt; 27

&lt;212&gt; DNA

&lt;213&gt; Mouse

&lt;400&gt; 48

```

cag caa tat aac agc ttt cct tac acg 27
Gln Gln Tyr Asn Ser Phe Pro Tyr Thr
1           5

```

&lt;210&gt; 49

&lt;211&gt; 348

&lt;212&gt; DNA

&lt;213&gt; Mouse

&lt;400&gt; 49

```

cag gtc aaa ctg cag cag tct ggg gca gag ctt gtc aag cca ggg gcc 48
Gln Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
Page 12

```

5' to 3'																3'
tca	gtc	aag	ttg	tcc	tgc	aca	gct	tct	ggc	ttc	aac	att	aaa	gac	acc	96
Ser	Val	Lys	Leu	Ser	Cys	Thr	Ala	Ser	Gly	Phe	Asn	Ile	Lys	Asp	Thr	
20																
tat	ata	cac	tgg	gtg	aag	cag	agc	cct	gaa	cag	ggc	ctg	gag	tgg	att	144
Tyr	Ile	His	Trp	Val	Lys	Gln	Ser	Pro	Glu	Gln	Gly	Leu	Glu	Trp	Ile	
35																
gga	agg	atc	gat	cct	ccg	aat	gat	aat	act	aaa	tat	gac	ccg	aag	ttc	192
Gly	Trp	Ile	Asp	Pro	Pro	Asn	Asp	Asn	Thr	Lys	Tyr	Asp	Pro	Lys	Phe	
50																
cag	ggc	aag	gcc	act	ata	aca	gca	gac	aca	tcc	tcc	aat	aca	gcc	tac	240
Gln	Gly	Lys	Ala	Thr	Ile	Thr	Ala	Asp	Thr	Ser	Ser	Asn	Thr	Ala	Tyr	
65																
atg	cag	ctc	cgc	agc	ctg	aca	tct	gag	gac	act	gcc	gtc	tat	tac	tgt	288
Met	Gln	Leu	Arg	Ser	Leu	Thr	Ser	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	
85																
gcc	ctc	cca	ccg	ttc	tac	ttt	gac	tac	tgg	ggc	cat	ggc	acc	acg	gtc	336
Ala	Leu	Pro	Pro	Phe	Tyr	Phe	Asp	Tyr	Trp	Gly	His	Gly	Thr	Thr	Val	
100																
acc	gtc	tcc	tca													348
Thr	Val	Ser	Ser													
115																

<210>	50
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<212>	DNA
<213>	Mouse

<400> 50

gac Asp 1	atc Ile	gag Glu	ctc Leu	act Thr 5	cag Gln	tct Ser	cca Pro	aaa Lys	ttc Phe 10	atg Met	tcc Ser	aca Thr	tca Ser	gta Val 15	gga Gly	48
gac Asp	agg Arg	gtc Val	agc Ser 20	gtc Val	acc Thr	tgc Cys	aag Lys	gcc Ala 25	agt Ser	cag Gln	aat Asn	gtg Val 30	gat Asp	act Thr	aat Asn	96
gta Val	gcc Ala	tgg Trp 35	tat Tyr	caa Gln	cag Gln	aaa Lys	cca Pro 40	ggg Gly	caa Gln	tct Ser	cct Pro	aaa Lys 45	gca Ala	ctg Leu	att Ile	144
tac Tyr	tcg Ser 50	gca Ala	tcc Ser	tac Tyr	cgg Arg	tac Tyr 55	agt Ser	gga Gly	gtc Val	cct Pro	gat Asp 60	cgc Arg	ttc Phe	aca Thr	ggc Gly	192
agt Ser 65	gga Gly	tct Ser	ggg Gly	aca Thr	gat Asp 70	ttc Phe	act Thr	ctc Leu	acc Thr	atc Ile 75	agc Ser	aat Asn	gtg Val	cag Gln	tct Ser 80	240
gaa Glu	gac Asp	ttg Leu	gca Ala	gag Glu 85	tat Tyr	ttc Phe	tgt Cys	cag Gln	caa Gln 90	tat Tyr	aac Asn	agc Ser	ttt Phe 95	cct Pro	tac Tyr	288
acg Thr	ttc Phe	gga Gly	ggg Gly 100	ggg Gly	acc Thr	aag Lys	ctg Leu	gaa Glu 105	ata Ile	aaa Lys	cgg Arg	gcg Ala				327

<210>	51
<211>	240
<212>	PRT
<213>	Mouse

<400> 51

Gln Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala  
1 5 10 15  
Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr  
20 25 30

## SeqListing.txt

Tyr Ile His Trp Val Lys Gln Ser Pro Glu Gln Gly Leu Glu Trp Ile  
 35 40 45  
 Gly Trp Ile Asp Pro Pro Asn Asp Asn Thr Lys Tyr Asp Pro Lys Phe  
 50 55 60  
 Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr  
 65 70 75 80  
 Met Gln Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Leu Pro Pro Phe Tyr Phe Asp Tyr Trp Gly His Gly Thr Thr Val  
 100 105 110  
 Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 115 120 125  
 Gly Gly Ser Asp Ile Glu Leu Thr Gln Ser Pro Lys Phe Met Ser Thr  
 130 135 140  
 Ser Val Gly Asp Arg Val Ser Val Thr Cys Lys Ala Ser Gln Asn Val  
 145 150 155 160  
 Asp Thr Asn Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys  
 165 170 175  
 Ala Leu Ile Tyr Ser Ala Ser Tyr Arg Tyr Ser Gly Val Pro Asp Arg  
 180 185 190  
 Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn  
 195 200 205  
 Val Gln Ser Glu Asp Leu Ala Glu Tyr Phe Cys Gln Gln Tyr Asn Ser  
 210 215 220  
 Phe Pro Tyr Thr Phe Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala  
 225 230 235 240

&lt;210&gt; 52

&lt;211&gt; 720

&lt;212&gt; DNA

&lt;213&gt; Mouse

&lt;400&gt; 52

cag gtc aaa ctg cag cag tct ggg gca gag ctt gtc aag cca ggg gcc	48
Gln Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala	
1 5 10 15	
tca gtc aag ttg tcc tgc aca gct tct ggc ttc aac att aaa gac acc	96
Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr	
20 25 30	
tat ata cac tgg gtg aag cag agc cct gaa cag ggc ctg gag tgg att	144
Tyr Ile His Trp Val Lys Gln Ser Pro Glu Gln Gly Leu Glu Trp Ile	
35 40 45	
gga agg atc gat cct ccg aat gat aat act aaa tat gac ccg aag ttc	192
Gly Trp Ile Asp Pro Pro Asn Asp Asn Thr Lys Tyr Asp Pro Lys Phe	
50 55 60	
cag ggc aag gcc act ata aca gca gac aca tcc tcc aat aca gcc tac	240
Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Asn Thr Ala Tyr	
65 70 75 80	
atg cag ctc cgc agc ctg aca tct gag gac act gcc gtc tat tac tgt	288
Met Gln Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys	
85 90 95	
gcc ctc cca ccg ttc tac ttt gac tac tgg ggc cat ggc acc acg gtc	336
Ala Leu Pro Phe Tyr Phe Asp Tyr Trp Gly His Gly Thr Thr Val	
100 105 110	
acc gtc tcc tca ggt gga ggc ggt tca ggc gga ggg ggc tct ggc ggt	384
Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly	
115 120 125	
ggc gga tcg gac atc gag ctc act cag tct cca aaa ttc atg tcc aca	432
Gly Gly Ser Asp Ile Glu Leu Thr Gln Ser Pro Lys Phe Met Ser Thr	
130 135 140	
tca gta gga gac agg gtc agc gtc acc tgc aag gcc agt cag aat gtg	480
Ser Val Gly Asp Arg Val Ser Val Thr Cys Lys Ala Ser Gln Asn Val	

Sequence alignment																	
145	gat	act	aat	gta	gcc	tgg	tat	caa	cag	aaa	cca	ggg	caa	tct	cct	aaa	528
Asp	Thr	Asn	Val	Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Lys		
				165						170					175		576
gca	ctg	att	tac	tcg	gca	tcc	tac	cgg	tac	agt	gga	gtc	cct	gat	cgc		
Ala	Leu	Ile	Tyr	Ser	Ala	Ser	Tyr	Arg	Tyr	Ser	Gly	Val	Pro	Asp	Arg		
				180					185					190			624
ttc	aca	ggc	agt	gga	tct	ggg	aca	gat	ttc	act	ctc	acc	atc	agc	aat		
Phe	Thr	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Asn		
				195				200					205				672
gtg	cag	tct	gaa	gac	ttg	gca	gag	tat	ttc	tgt	cag	caa	tat	aac	agc		
Val	Gln	Ser	Glu	Asp	Leu	Ala	Glu	Tyr	Phe	Cys	Gln	Gln	Tyr	Asn	Ser		
						215					220						720
ttt	cct	tac	acg	ttc	gga	ggg	ggg	acc	aag	ctg	gaa	ata	aaa	cgg	gcg		
Phe	Pro	Tyr	Thr	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Glu	Ile	Lys	Arg	Ala		
225					230					235					240		

<210>	53
<211>	11
<212>	PRT
<213>	Human

<400> 53

Arg Ala Ser Gln Ser Val Ser Ser Tyr Leu Ala  
5 10

<210>	54
<211>	7
<212>	PRT
<213>	Human

**<400> 54**

Asp Ser Ser Asn Arg Ala Thr  
5

<210>	55
<211>	9
<212>	PRT
<213>	Human

**<400> 55**

Leu Gln His Asn Thr Phe Pro Pro Thr  
5

<210>	56
<211>	11
<212>	PRT
<213>	Human

<400> 56

Arg Ala Ser Gln Gly Ile Ser Ser Arg Leu Ala  
5 10

<210>	57
<211>	7
<212>	PRT
<213>	Human

**<400> 57**

## SeqListing.txt

Ala Ala Ser Ser Leu Gln Thr  
5

<210> 58  
<211> 9  
<212> PRT  
<213> Human

<400> 58

Gln Gln Ala Asn Arg Phe Pro Pro Thr  
5

<210> 59  
<211> 14  
<212> PRT  
<213> Human

<400> 59

Ala Gly Thr Thr Thr Asp Leu Thr Tyr Tyr Asp Leu Val Ser  
5 10

<210> 60  
<211> 7  
<212> PRT  
<213> Human

<400> 60

Asp Gly Asn Lys Arg Pro Ser  
5

<210> 61  
<211> 10  
<212> PRT  
<213> Human

<400> 61

Asn Ser Tyr Val Ser Ser Arg Phe Tyr Val  
5 10

<210> 62  
<211> 13  
<212> PRT  
<213> Human

<400> 62

Ser Gly Ser Thr Ser Asn Ile Gly Thr Asn Thr Ala Asn  
5 10

<210> 63  
<211> 7  
<212> PRT  
<213> Human

<400> 63

Asn Asn Asn Gln Arg Pro Ser  
5

<210> 64  
<211> 12  
<212> PRT  
<213> uman

<400> 64



SeqListing.txt  
Ala Ala Trp Asp Asp Ser Leu Asn Gly His Trp Val  
5 10

<400> 66

<400> 67

<400> 68

<400> 69

<400> 70

<400> 71

## SeqListing.txt

gag gtc cag ctg gtg cag tct ggg gct gag gtg aag aag cct ggg gcc	48
Glu Val Gln Leu Val <sub>5</sub> Gln Ser Gly Ala <sub>10</sub> Glu Val Lys Lys Pro Gly <sub>15</sub> Ala	
tca gtg aag gtc tcc tgc aag gct tct gga ggc acc ttc agc agc tat	96
Ser Val Lys Val <sub>20</sub> Ser Cys Lys Ala <sub>25</sub> Ser Gly Gly Thr Phe <sub>30</sub> Ser Ser Tyr	
gct atc agc tgg gtg cga cag gcc cct gga caa ggg ctt gag tgg atg	144
Ala Ile Ser <sub>35</sub> Trp Val Arg Gln Ala <sub>40</sub> Pro Gly Gln Gly <sub>45</sub> Leu Glu Trp Met	
gga ggg atc atc cct atc ttt ggt aca gca aac tac gca cag aag ttc	192
Gly Gly <sub>50</sub> Ile Ile Pro Ile Phe <sub>55</sub> Gly Thr Ala Asn Tyr <sub>60</sub> Ala Gln Lys Phe	
cag ggc aga gtc act ttt acc gcg gac aaa tcc acg agt aca gcc tat	240
Gln Gly Arg Val Thr Phe <sub>70</sub> Thr Ala Asp Lys <sub>75</sub> Ser Thr Ser Thr Ala Tyr <sub>80</sub>	
atg gag ttg agg agc ctg aga tct gac gac acg gcc gtg tat tac tgt	288
Met Glu Leu Arg Ser <sub>85</sub> Leu Arg Ser Asp Asp <sub>90</sub> Thr Ala Val Tyr Tyr Cys	
gcg aga gga tac gat tac tat gat agt agt ggc gtg gct tcc ccc ttt	336
Ala Arg Gly Tyr <sub>100</sub> Asp Tyr Tyr Asp <sub>105</sub> Ser Ser Gly Val Ala <sub>110</sub> Ser Pro Phe	
gac tac tgg ggc cag gga acc ctg gtc acc gtc tca agc	375
Asp Tyr Trp <sub>115</sub> Gly Gln Gly Thr Leu Val <sub>120</sub> Thr Val Ser Ser <sub>125</sub>	

<210> 72  
 <211> 125  
 <212> PRT  
 <213> Human

<400> 72

Glu Val Gln Leu Val <sub>5</sub> Gln Ser Gly Ala <sub>10</sub> Glu Val Lys Lys Pro Gly <sub>15</sub> Ala
Ser Val Lys Val <sub>20</sub> Ser Cys Lys Ala <sub>25</sub> Ser Gly Gly Thr Phe <sub>30</sub> Ser Ser Tyr
Ala Ile Ser <sub>35</sub> Trp Val Arg Gln Ala <sub>40</sub> Pro Gly Gln Gly <sub>45</sub> Leu Glu Trp Met
Gly Gly <sub>50</sub> Ile Ile Pro Ile Phe <sub>55</sub> Gly Thr Ala Asn Tyr <sub>60</sub> Ala Gln Lys Phe
Gln Gly Arg Val Thr Phe <sub>70</sub> Thr Ala Asp Lys <sub>75</sub> Ser Thr Ser Thr Ala Tyr <sub>80</sub>
Met Glu Leu Arg Ser <sub>85</sub> Leu Arg Ser Asp Asp <sub>90</sub> Thr Ala Val Tyr Tyr Cys
Ala Arg Gly Tyr <sub>100</sub> Asp Tyr Tyr Asp <sub>105</sub> Ser Ser Gly Val Ala <sub>110</sub> Ser Pro Phe
Asp Tyr Trp <sub>115</sub> Gly Gln Gly Thr Leu Val <sub>120</sub> Thr Val Ser Ser <sub>125</sub>

<210> 73  
 <211> 333  
 <212> DNA  
 <213> Human

<400> 73

cag tct gtg ctg act cag cca ccc tca gcg tct ggg acc ccc ggg cag	48
Gln Ser Val <sub>5</sub> Leu Thr Gln Pro Pro Ser Ala <sub>10</sub> Ser Gly Thr Pro Gly <sub>15</sub> Gln	
agg gtc acc atc tct tgt tct gga agc acc tcc aac atc ggt act aat	96
Arg Val Thr <sub>20</sub> Ile Ser Cys Ser Gly <sub>25</sub> Ser Thr Ser Asn Ile <sub>30</sub> Gly Thr Asn	
act gca aac tgg ttc cag cag ctc cca gga acg gcc ccc aaa ctc ctc	144

## SeqListing.txt

Thr	Ala	Asn	Trp	Phe	Gln	Gln	Leu	Pro	Gly	Thr	Ala	Pro	Lys	Leu	Leu	
		35					40					45				
atc	cac	aat	aat	aat	cag	cgg	ccc	tca	ggg	gtc	cct	gac	cga	ttc	tct	192
Ile	His	Asn	Asn	Asn	Gln	Arg	Pro	Ser	Gly	Val	Pro	Asp	Arg	Phe	Ser	
		50				55					60					
ggc	tcc	aag	tct	ggc	acc	tca	gcc	tcc	ctg	gcc	atc	agt	ggg	ctc	cag	240
Gly	Ser	Lys	Ser	Gly	Thr	Ser	Ala	Ser	Leu	Ala	Ile	Ser	Gly	Leu	Gln	
65					70					75					80	
tct	gag	gat	gag	gct	gat	tat	tac	tgt	gca	gca	tgg	gat	gac	agc	ctg	288
Ser	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Ala	Ala	Trp	Asp	Asp	Ser	Leu	
				85					90					95		
aat	ggc	cat	tgg	gtg	ttc	ggc	gga	ggg	acc	aag	ctg	acc	gtc	ctg		333
Asn	Gly	His	Trp	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu		
			100					105					110			

<210> 74  
 <211> 111  
 <212> PRT  
 <213> Human

<400> 74

Gln	Ser	Val	Leu	Thr	Gln	Pro	Pro	Ser	Ala	Ser	Gly	Thr	Pro	Gly	Gln	
				5					10					15		
Arg	Val	Thr	Ile	Ser	Cys	Ser	Gly	Ser	Thr	Ser	Asn	Ile	Gly	Thr	Asn	
			20					25					30			
Thr	Ala	Asn	Trp	Phe	Gln	Gln	Leu	Pro	Gly	Thr	Ala	Pro	Lys	Leu	Leu	
		35					40					45				
Ile	His	Asn	Asn	Asn	Gln	Arg	Pro	Ser	Gly	Val	Pro	Asp	Arg	Phe	Ser	
	50					55					60					
Gly	Ser	Lys	Ser	Gly	Thr	Ser	Ala	Ser	Leu	Ala	Ile	Ser	Gly	Leu	Gln	
65					70					75					80	
Ser	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Ala	Ala	Trp	Asp	Asp	Ser	Leu	
				85					90					95		
Asn	Gly	His	Trp	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu		
			100					105					110			

<210> 75  
 <211> 348  
 <212> DNA  
 <213> Human

<400> 75

gag	gtg	cag	ctg	gtg	cag	tct	ggg	gga	ggc	ctg	gtc	aag	cct	ggg	ggg	48
Glu	Val	Gln	Leu	Val	Gln	Ser	Gly	Gly	Gly	Leu	Val	Lys	Pro	Gly	Gly	
				5					10					15		
tcc	ctg	aga	ctc	tcc	tgt	gca	gcc	tct	gga	ttc	acc	ttc	agt	agc	tat	96
Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Ser	Ser	Tyr	
			20					25					30			
agc	atg	aac	tgg	gtc	cgc	cag	gct	cca	ggg	aag	ggg	ctg	gag	tgg	gtc	144
Ser	Met	Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	
		35					40					45				
tca	tcc	att	agt	agt	agt	agt	agt	tac	ata	tac	tac	gca	gac	tca	gtg	192
Ser	Ser	Ile	Ser	Ser	Ser	Ser	Ser	Tyr	Ile	Tyr	Tyr	Ala	Asp	Ser	Val	
		50					55				60					
aag	ggc	cga	ttc	acc	atc	tcc	aga	gac	aac	gcc	aag	aac	tca	ctg	tat	240
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ala	Lys	Asn	Ser	Leu	Tyr	
65					70					75					80	
ctg	caa	atg	aac	agc	ctg	aga	gcc	gag	gac	acg	gct	gtg	tat	tac	tgt	288
Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	
				85					90					95		
gcg	aga	gtc	aca	gat	gct	ttt	gat	atc	tgg	ggc	caa	ggg	aca	atg	gtc	336

## SeqListing.txt

Ala Arg Val Thr Asp Ala Phe Asp Ile Trp Gly Gln Gly Thr Met Val  
 100 105 110  
 acc gtc tca agc  
 Thr Val Ser Ser  
 115

348

<210> 76  
 <211> 116  
 <212> PRT  
 <213> Human

<400> 76

Glu Val Gln Leu Val Gln Ser Gly Gly Gly Leu Val Lys Pro Gly Gly  
 5 10 15  
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr  
 20 25 30  
 Ser Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45  
 Ser Ser Ile Ser Ser Ser Ser Tyr Ile Tyr Tyr Ala Asp Ser Val  
 50 55 60  
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr  
 65 70 75 80  
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Val Thr Asp Ala Phe Asp Ile Trp Gly Gln Gly Thr Met Val  
 100 105 110  
 Thr Val Ser Ser  
 115

<210> 77  
 <211> 321  
 <212> DNA  
 <213> Human

<400> 77

gaa att gtg atg aca cag tct cca gcc acc ctg tct ttg tct cca ggg 48  
 Glu Ile Val Met Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly  
 5 10 15  
 gaa aga gcc acc ctc tcc tgc agg gcc agt cag agt gtt agc agc tac 96  
 Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Tyr  
 20 25 30  
 tta gcc tgg tac caa cag aaa cct ggc cag gct ccc agg ctc ctc atc 144  
 Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile  
 35 40 45  
 tat gat tca tcc aac agg gcc act ggc atc cca gcc aga ttc agt ggc 192  
 Tyr Asp Ser Ser Asn Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly  
 50 55 60  
 agt ggg tct ggg aca gac ttc act ctc acc atc agc agc cta gag cct 240  
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu Pro  
 65 70 75 80  
 gaa gat ttt gca act tat tac tgt cta cag cat aac act ttt cct ccg 288  
 Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn Thr Phe Pro Pro  
 85 90 95  
 acg ttc ggc caa ggg acc aag gtg gaa atc aaa 321  
 Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
 100 105

<210> 78  
 <211> 107  
 <212> PRT  
 <213> Human

## SeqListing.txt

<400> 78

Glu	Ile	Val	Met	Thr	Gln	Ser	Pro	Ala	Thr	Leu	Ser	Leu	Ser	Pro	Gly
				5					10					15	
Glu	Arg	Ala	Thr	Leu	Ser	Cys	Arg	Ala	Ser	Gln	Ser	Val	Ser	Ser	Tyr
			20					25					30		
Leu	Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile
		35					40					45			
Tyr	Asp	Ser	Ser	Asn	Arg	Ala	Thr	Gly	Ile	Pro	Ala	Arg	Phe	Ser	Gly
	50					55					60				
Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Glu	Pro
	65				70					75					80
Glu	Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Leu	Gln	His	Asn	Thr	Phe	Pro	Pro
			85						90					95	
Thr	Phe	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys					
			100					105							

<210> 79

**<211> 348**

**<212> DNA**

**<213> Human**

<400> 79

[illegible]

**<210> 80**

<211> 330

## <212> DNA

<213> Human

**<400> 80**

cag	tct	gcc	ctg	act	cag	cct	gcc	tcc	ctg	tct	ggg	tct	cct	gga	cag	48
Gln	Ser	Ala	Leu	Thr	Gln	Pro	Ala	Ser	Leu	Ser	Gly	Ser	Pro	Gly	Gln	
				5					10					15		
tcg	atc	acc	atc	tcc	tgc	gct	gga	acc	acc	act	gat	ctt	aca	tat	tat	96
Ser	Ile	Thr	Ile	Ser	Cys	Ala	Gly	Thr	Thr	Thr	Asp	Leu	Thr	Tyr	Tyr	
			20					25					30			

## SeqListing.txt

gac	ctt	gtc	tcc	tgg	tac	caa	cag	cac	cca	ggc	caa	gca	ccc	aaa	ctc	144
Asp	Leu	Val	Ser	Trp	Tyr	Gln	Gln	His	Pro	Gly	Gln	Ala	Pro	Lys	Leu	
		35					40				45					
gtg	att	tat	gac	ggc	aat	aag	cgg	ccc	tca	gga	gtt	tct	aat	cgc	ttc	192
Val	Ile	Tyr	Asp	Gly	Asn	Lys	Arg	Pro	Ser	Gly	Val	Ser	Asn	Arg	Phe	
	50				55					60						
tct	ggc	tcc	aag	tct	ggc	aac	acg	gcc	tcc	ctg	aca	atc	tct	gga	ctc	240
Ser	Gly	Ser	Lys	Ser	Gly	Asn	Thr	Ala	Ser	Leu	Thr	Ile	Ser	Gly	Leu	
65					70				75						80	
cag	gct	gag	gac	gag	gct	gat	tat	tac	tgc	aac	tca	tat	gta	agc	agc	288
Gln	Ala	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Asn	Ser	Tyr	Val	Ser	Ser	
			85						90					95		
agg	ttt	tat	gtc	ttc	gga	act	ggg	acc	aag	gtc	acc	gtc	cta			330
Arg	Phe	Tyr	Val	Phe	Gly	Thr	Gly	Thr	Lys	Val	Thr	Val	Leu			
			100					105					110			

<210> 81  
 <211> 110  
 <212> PRT  
 <213> Human

<400> 81

Gln	Ser	Ala	Leu	Thr	Gln	Pro	Ala	Ser	Leu	Ser	Gly	Ser	Pro	Gly	Gln	
				5					10					15		
Ser	Ile	Thr	Ile	Ser	Cys	Ala	Gly	Thr	Thr	Thr	Asp	Leu	Thr	Tyr	Tyr	
			20					25					30			
Asp	Leu	Val	Ser	Trp	Tyr	Gln	Gln	His	Pro	Gly	Gln	Ala	Pro	Lys	Leu	
		35					40					45				
Val	Ile	Tyr	Asp	Gly	Asn	Lys	Arg	Pro	Ser	Gly	Val	Ser	Asn	Arg	Phe	
	50				55					60						
Ser	Gly	Ser	Lys	Ser	Gly	Asn	Thr	Ala	Ser	Leu	Thr	Ile	Ser	Gly	Leu	
65					70				75						80	
Gln	Ala	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Asn	Ser	Tyr	Val	Ser	Ser	
			85						90					95		
Arg	Phe	Tyr	Val	Phe	Gly	Thr	Gly	Thr	Lys	Val	Thr	Val	Leu			
			100					105					110			

<210> 82  
 <211> 348  
 <212> DNA  
 <213> Human

<400> 82

gaa	gtg	cag	ctg	gtg	cag	tct	ggg	gga	ggc	ctg	gtc	aag	cct	ggg	ggg	48
Glu	Val	Gln	Leu	Val	Gln	Ser	Gly	Gly	Gly	Leu	Val	Lys	Pro	Gly	Gly	
				5				10						15		
tcc	ctg	aga	ctc	tcc	tgt	gca	gcc	tct	gga	ttc	acc	ttc	agt	agc	tat	96
Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Ser	Ser	Tyr	
			20					25					30			
agc	atg	aac	tgg	gtc	cgc	cag	gct	cca	ggg	aag	ggg	ctg	gag	tgg	gtc	144
Ser	Met	Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	
		35					40					45				
tca	tcc	att	agt	agt	agt	agt	agt	tac	ata	tac	tac	gca	gac	tca	gtg	192
Ser	Ser	Ile	Ser	Ser	Ser	Ser	Ser	Tyr	Ile	Tyr	Tyr	Ala	Asp	Ser	Val	
	50				55					60						
aag	ggc	cga	ttc	acc	atc	tcc	aga	gac	aac	gcc	aag	gac	tca	ctg	tat	240
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ala	Lys	Asp	Ser	Leu	Tyr	
65					70				75						80	
ctg	caa	atg	aac	agc	ctg	aga	gcc	gag	gac	acg	gct	gtg	tat	tac	tgt	288
Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	
			85					90						95		

## SeqListing.txt

gcg aga gtc aca gat gct ttt gat atc tgg ggc caa ggg aca atg gtc 336  
Ala Arg Val Thr Asp Ala Phe Asp Ile Trp Gly Gln Gly Thr Met Val 110

acc gtc tca agc 348  
Thr Val Ser Ser 115

<210> 83  
<211> 116  
<212> PRT  
<213> Human

<400> 83

Glu Val Gln Leu Val Gln Ser Gly Gly Gly Leu Val Lys Pro Gly Gly  
5 10 15  
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr  
20 25 30  
Ser Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45  
Ser Ser Ile Ser Ser Ser Ser Tyr Ile Tyr Tyr Ala Asp Ser Val  
50 55 60  
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asp Ser Leu Tyr  
65 70 75 80  
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95  
Ala Arg Val Thr Asp Ala Phe Asp Ile Trp Gly Gln Gly Thr Met Val  
100 105 110  
Thr Val Ser Ser 115

<210> 84  
<211> 321  
<212> DNA  
<213> Human

<400> 84

gac atc cag ttg acc cag tct cca tct tct gtg tct gca tct gta gga 48  
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly 15  
5 10  
gac aga gtc acc atc act tgt cgg gcg agt cag ggt att agt agt cgg 96  
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Arg 20 25 30  
tta gcc tgg tat cag cag aaa cca ggg aaa gcc cct aag ctc ctg atc 144  
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile 35 40 45  
tat gct gca tcc agt ttg caa act ggg gtc cca tca agg ttc agc ggc 192  
Tyr Ala Ala Ser Ser Leu Gln Thr Gly Val Pro Ser Arg Phe Ser Gly 50 55 60  
agt gga tct ggg aca gat ttc act ctc act atc agc agc ctg cag cct 240  
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro 65 70 75 80  
gaa gat ttt gca act tac tat tgt caa cag gct aac agg ttc cct ccg 288  
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ala Asn Arg Phe Pro Pro 85 90 95  
act ttc ggc cct ggg acc aaa gtg gat atc aaa 321  
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys 100 105

<210> 85  
<211> 107  
<212> PRT

## SeqListing.txt

&lt;213&gt; Human

&lt;400&gt; 85

```

Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
          5          10          15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Arg
          20          25          30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
          35          40          45
Tyr Ala Ala Ser Ser Leu Gln Thr Gly Val Pro Ser Arg Phe Ser Gly
          50          55          60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65          70          75          80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ala Asn Arg Phe Pro Pro
          85          90          95
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
          100          105

```

&lt;210&gt; 86

&lt;211&gt; 333

&lt;212&gt; DNA

&lt;213&gt; Human

&lt;400&gt; 86

```

cag tct gtc gtg acg cag ccg ccc tca gtg tct ggg gcc cca ggg cag      48
Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
          5          10          15
agg gtc acc atc tcc tgc act ggg agc cac tcc aac ttc ggg gca gga      96
Arg Val Thr Ile Ser Cys Thr Gly Ser His Ser Asn Phe Gly Ala Gly
          20          25          30
act gat gta cat tgg tac caa cac ctt cca gga aca gcc ccc aga ctc      144
Thr Asp Val His Trp Tyr Gln His Leu Pro Gly Thr Ala Pro Arg Leu
          35          40          45
ctc att cat gga gac agt aat cgg ccc tcc ggg gtc cct gac cga ttc      192
Leu Ile His Gly Asp Ser Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
          50          55          60
tct ggc tcc agg tct ggc acc tca gcc tcc ctg gcc atc act ggg ctc      240
Ser Gly Ser Arg Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
          65          70          75          80
cgg gtt gag gat gag gct gat tat tac tgt cag tcg tat gac tat ggc      288
Arg Val Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Tyr Gly
          85          90          95
ctg aga ggt tgg gtg ttc ggc ggc ggg acc aag ctg acc gtc ctt      333
Leu Arg Gly Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
          100          105          110

```

&lt;210&gt; 87

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; Human

&lt;400&gt; 87

```

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
          5          10          15
Arg Val Thr Ile Ser Cys Thr Gly Ser His Ser Asn Phe Gly Ala Gly
          20          25          30
Thr Asp Val His Trp Tyr Gln His Leu Pro Gly Thr Ala Pro Arg Leu
          35          40          45
Leu Ile His Gly Asp Ser Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
          50          55          60

```



## SeqListing.txt

Ser Gly Ser Arg Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu  
 65 70 75 80  
 Arg Val Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Tyr Gly  
 85 90 95  
 Leu Arg Gly Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
 100 105 110

<210> 88  
 <211> 321  
 <212> DNA  
 <213> Human

<400> 88

gat gtt gtg atg act cag tct cca tcg tcc ctg tct gca tct gta ggg 48  
 Asp Val Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 5 10 15  
 gac aga gtc acc atc act tgc cgg gca agt cag aac att aac aac tat 96  
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asn Ile Asn Asn Tyr  
 20 25 30  
 tta aat tgg tat caa cag aaa cca gga aaa gcc cct aag ctc ctg atc 144  
 Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
 35 40 45  
 tat gct gcc tcc act ttg caa agt ggg gtc cca tca agg ttc agt ggc 192  
 Tyr Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60  
 agt gga tct ggg aca gat ttc act ctc acc atc acc agc cta cag cct 240  
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Thr Ser Leu Gln Pro  
 65 70 75 80  
 gaa gat tct gca act tat tac tgc caa cag tat tcc cgt tat cct ccc 288  
 Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln Tyr Ser Arg Tyr Pro Pro  
 85 90 95  
 act ttc ggc gga ggg acc aag gtg gag atc aca 321  
 Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Thr  
 100 105

<210> 89  
 <211> 107  
 <212> PRT  
 <213> Human

<400> 89

Asp Val Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 5 10 15  
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asn Ile Asn Asn Tyr  
 20 25 30  
 Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
 35 40 45  
 Tyr Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60  
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Thr Ser Leu Gln Pro  
 65 70 75 80  
 Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln Tyr Ser Arg Tyr Pro Pro  
 85 90 95  
 Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Thr  
 100 105

<210> 90  
 <211> 330  
 <212> DNA  
 <213> Human

## SeqListing.txt

&lt;400&gt; 90

cag	tct	gcc	ctg	act	cag	cct	gcc	tcc	gtg	tct	ggg	tct	cgt	gga	cag	48
Gln	Ser	Ala	Leu	Thr	Gln	Pro	Ala	Ser	Val	Ser	Gly	Ser	Arg	Gly	Gln	
				5					10					15		
tcg	atc	acc	ctc	tcc	tgc	acc	ggc	tcc	agc	act	gat	gtg	ggt	aat	tat	96
Ser	Ile	Thr	Leu	Ser	Cys	Thr	Gly	Ser	Ser	Thr	Asp	Val	Gly	Asn	Tyr	
			20					25					30			
aac	tat	atc	tcc	tgg	tac	caa	caa	cac	cca	ggc	caa	gcc	ccc	aaa	ctc	144
Asn	Tyr	Ile	Ser	Trp	Tyr	Gln	Gln	His	Pro	Gly	Gln	Ala	Pro	Lys	Leu	
			35					40				45				
ttg	att	tac	gat	gtc	act	agt	cgg	ccc	tca	ggt	gtt	tct	gat	cgc	ttc	192
Leu	Ile	Tyr	Asp	Val	Thr	Ser	Arg	Pro	Ser	Gly	Val	Ser	Asp	Arg	Phe	
			50			55					60					
tct	ggc	tcc	aag	tca	ggc	ctc	acg	gcc	tcc	ctg	acc	atc	tct	gga	ctc	240
Ser	Gly	Ser	Lys	Ser	Gly	Leu	Thr	Ala	Ser	Leu	Thr	Ile	Ser	Gly	Leu	
			65		70			75						80		
cag	cct	gaa	gac	gag	gct	gac	tat	tac	tgc	aac	tcc	tat	tct	gcc	acc	288
Gln	Pro	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Asn	Ser	Tyr	Ser	Ala	Thr	
				85					90					95		
gac	act	ctt	gtt	ttt	ggc	gga	ggg	acc	aag	ctg	acc	gtc	cta			330
Asp	Thr	Leu	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu			
			100					105					110			

&lt;210&gt; 91

&lt;211&gt; 110

&lt;212&gt; PRT

&lt;213&gt; Human

&lt;400&gt; 91

Gln	Ser	Ala	Leu	Thr	Gln	Pro	Ala	Ser	Val	Ser	Gly	Ser	Arg	Gly	Gln	
				5					10					15		
Ser	Ile	Thr	Leu	Ser	Cys	Thr	Gly	Ser	Ser	Thr	Asp	Val	Gly	Asn	Tyr	
			20					25					30			
Asn	Tyr	Ile	Ser	Trp	Tyr	Gln	Gln	His	Pro	Gly	Gln	Ala	Pro	Lys	Leu	
			35					40				45				
Leu	Ile	Tyr	Asp	Val	Thr	Ser	Arg	Pro	Ser	Gly	Val	Ser	Asp	Arg	Phe	
			50			55					60					
Ser	Gly	Ser	Lys	Ser	Gly	Leu	Thr	Ala	Ser	Leu	Thr	Ile	Ser	Gly	Leu	
			65		70			75						80		
Gln	Pro	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Asn	Ser	Tyr	Ser	Ala	Thr	
				85					90					95		
Asp	Thr	Leu	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu			
			100					105					110			

&lt;210&gt; 92

&lt;211&gt; 333

&lt;212&gt; DNA

&lt;213&gt; Human

&lt;400&gt; 92

cag	gct	gtg	ctg	act	cag	ccg	tcc	tca	gtg	tct	ggg	gcc	cca	gga	cag	48
Gln	Ala	Val	Leu	Thr	Gln	Pro	Ser	Ser	Val	Ser	Gly	Ala	Pro	Gly	Gln	
				5					10					15		
agg	gtc	acc	atc	tcc	tgc	act	ggg	caa	agc	tcc	aat	atc	ggg	gca	gat	96
Arg	Val	Thr	Ile	Ser	Cys	Thr	Gly	Gln	Ser	Ser	Asn	Ile	Gly	Ala	Asp	
			20				25						30			
tat	gat	gta	cat	tgg	tac	cag	caa	ttt	cca	gga	aca	gcc	ccc	aaa	ctc	144
Tyr	Asp	Val	His	Trp	Tyr	Gln	Gln	Phe	Pro	Gly	Thr	Ala	Pro	Lys	Leu	
			35				40					45				
ctc	atc	tat	ggt	cac	aac	aat	cgg	ccc	tca	ggg	gtc	cct	gac	cga	ttc	192

## SeqListing.txt

Leu	Ile	Tyr	Gly	His	Asn	Asn	Arg	Pro	Ser	Gly	Val	Pro	Asp	Arg	Phe	
50						55					60					
tct	ggc	tcc	aag	tct	ggc	acc	tca	gtc	tcc	ctg	gtc	atc	agt	ggg	ctc	240
Ser	Gly	Ser	Lys	Ser	Gly	Thr	Ser	Val	Ser	Leu	Val	Ile	Ser	Gly	Leu	
65					70					75					80	
cag	gct	gag	gat	gag	gct	gat	tat	tat	tgc	cag	tcc	tat	gac	agc	agt	288
Gln	Ala	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Gln	Ser	Tyr	Asp	Ser	Ser	
				85					90					95		
cta	agt	ggg	ttg	gta	ttc	ggc	gga	ggg	acc	aag	gtg	acc	gtc	cta		333
Leu	Ser	Gly	Leu	Val	Phe	Gly	Gly	Gly	Thr	Lys	Val	Thr	Val	Leu		
			100					105					110			

<210> 93  
 <211> 111  
 <212> PRT  
 <213> Human

<400> 93

Gln	Ala	Val	Leu	Thr	Gln	Pro	Ser	Ser	Val	Ser	Gly	Ala	Pro	Gly	Gln	
				5					10					15		
Arg	Val	Thr	Ile	Ser	Cys	Thr	Gly	Gln	Ser	Ser	Asn	Ile	Gly	Ala	Asp	
			20					25					30			
Tyr	Asp	Val	His	Trp	Tyr	Gln	Gln	Phe	Pro	Gly	Thr	Ala	Pro	Lys	Leu	
		35					40					45				
Leu	Ile	Tyr	Gly	His	Asn	Asn	Arg	Pro	Ser	Gly	Val	Pro	Asp	Arg	Phe	
	50					55					60					
Ser	Gly	Ser	Lys	Ser	Gly	Thr	Ser	Val	Ser	Leu	Val	Ile	Ser	Gly	Leu	
	65				70					75					80	
Gln	Ala	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Gln	Ser	Tyr	Asp	Ser	Ser	
				85					90					95		
Leu	Ser	Gly	Leu	Val	Phe	Gly	Gly	Gly	Thr	Lys	Val	Thr	Val	Leu		
			100					105					110			

<210> 94  
 <211> 321  
 <212> DNA  
 <213> Human

<400> 94

gac	atc	cag	ttg	acc	cag	tct	cca	tct	tct	gtg	tct	gca	tct	gtt	gga	48
Asp	Ile	Gln	Leu	Thr	Gln	Ser	Pro	Ser	Ser	Val	Ser	Ala	Ser	Val	Gly	
				5					10					15		
gac	agc	gtc	acc	atc	act	tgt	cgg	gcg	agt	cag	gat	att	agc	agc	tgg	96
Asp	Ser	Val	Thr	Ile	Thr	Cys	Arg	Ala	Ser	Gln	Asp	Ile	Ser	Ser	Trp	
			20					25					30			
tta	gcc	tgg	tat	caa	cag	aaa	cca	ggg	gag	gcc	cct	aag	ctc	ctg	atc	144
Leu	Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Glu	Ala	Pro	Lys	Leu	Leu	Ile	
		35					40					45				
tat	gct	gca	tcc	ctt	ctt	caa	agt	ggg	gtc	cca	tca	cgg	ttc	agc	ggc	192
Tyr	Ala	Ala	Ser	Leu	Leu	Gln	Ser	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly	
	50					55				60						
agt	gga	tct	ggg	aca	gat	ttc	gct	ctc	act	atc	aac	agc	ctg	cag	cct	240
Ser	Gly	Ser	Gly	Thr	Asp	Phe	Ala	Leu	Thr	Ile	Asn	Ser	Leu	Gln	Pro	
	65				70				75						80	
gaa	gat	ttt	gca	act	tac	ttt	tgt	caa	cag	gct	gac	agt	ttc	cct	ccc	288
Glu	Asp	Phe	Ala	Thr	Tyr	Phe	Cys	Gln	Gln	Ala	Asp	Ser	Phe	Pro	Pro	
				85					90					95		
acc	ttc	ggc	caa	ggg	aca	cgg	ctg	gag	att	aaa						321
Thr	Phe	Gly	Gln	Gly	Thr	Arg	Leu	Glu	Ile	Lys						
			100					105								

## SeqListing.txt

<210> 95  
 <211> 107  
 <212> PRT  
 <213> Human

<400> 95

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Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
              5              10              15
Asp Ser Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Ser Ser Trp
              20              25              30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Glu Ala Pro Lys Leu Leu Ile
              35              40              45
Tyr Ala Ala Ser Leu Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
              50              55              60
Ser Gly Ser Gly Thr Asp Phe Ala Leu Thr Ile Asn Ser Leu Gln Pro
              65              70              75              80
Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Ala Asp Ser Phe Pro Pro
              85              90              95
Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
              100              105

```

<210> 96  
 <211> 321  
 <212> DNA  
 <213> Human

<400> 96

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gac atc gag ttg acc cag tct cca tct tcc gtg tct gca tct gtg gga      48
Asp Ile Glu Leu Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
              5              10              15
gac aga gtc acc ctc act tgt cgg gcg agt cag agt att aag agg tgg      96
Asp Arg Val Thr Leu Thr Cys Arg Ala Ser Gln Ser Ile Lys Arg Trp
              20              25              30
tta gcc tgg tat cag cag aaa cca ggg aag gcc cct agg ctc ctc atc     144
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Arg Leu Leu Ile
              35              40              45
tat gct gca tcc act ttg caa agt ggg gtc cca tca agg ttc agc ggc     192
Tyr Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
              50              55              60
ggg gga tct ggg aca gat ttc act ctc acc atc aac agc ctg cag cct     240
Gly Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Gln Pro
              65              70              75              80
gaa gat ttt gca att tac tac tgt caa cag gct aac agt ttc cct ccc     288
Glu Asp Phe Ala Ile Tyr Tyr Cys Gln Gln Ala Asn Ser Phe Pro Pro
              85              90              95
act ttc ggc cct ggg acc aaa gtg gat atc aaa                        321
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
              100              105

```

<210> 97  
 <211> 107  
 <212> PRT  
 <213> Human

<400> 97

```

Asp Ile Glu Leu Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
              5              10              15
Asp Arg Val Thr Leu Thr Cys Arg Ala Ser Gln Ser Ile Lys Arg Trp
              20              25              30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Arg Leu Leu Ile
              35

```

## SeqListing.txt

```

      35      40      45
Tyr Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
      50      55      60
Gly Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Gln Pro
      65      70      75      80
Glu Asp Phe Ala Ile Tyr Tyr Cys Gln Gln Ala Asn Ser Phe Pro Pro
      85      90      95
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
      100      105

```

<210> 98  
 <211> 333  
 <212> DNA  
 <213> Human

<400> 98

```

cag tct gtc gtg acg cag ccg ccc tca gtg tct ggg gcc cca ggg cag      48
Gln Ser Val Val Thr      5 Gln Pro Pro Ser Val      10 Ser Gly Ala Pro Gly Gln
agg gtc acc atc tcc tgc agt ggg agc agg tcc aac atc ggg gca cac      96
Arg Val Thr Ile      20 Ser Cys Ser Gly Ser Arg Ser Asn Ile Gly Ala His
tat gaa gtc cag tgg tac cag cag ttt ccg gga gca gcc ccc aaa ctc      144
Tyr Glu Val Gln Trp Tyr Gln Gln Phe Pro Gly Ala Ala Pro Lys Leu
      35      40      45
ctc atc tat ggt gac acc aat cgg ccc tca ggg gtc cct gac cga ttc      192
Leu Ile Tyr Gly Asp Thr Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
      50      55      60
tct gcc tcc cac tct ggc acc tca gcc tcc ctt gcc atc aca ggg ctc      240
Ser Ala Ser His Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
      65      70      75      80
cag gct gag gat gag gct gat tat tac tgc cag tcg tat gac acc agt      288
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Thr Ser
      85      90      95
cta cgt ggt ccg gtg ttc ggc gga ggg acc aag ctg acc gtc cta      333
Leu Arg Gly Pro Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
      100      105      110

```

<210> 99  
 <211> 111  
 <212> PRT  
 <213> Human

<400> 99

```

Gln Ser Val Val Thr      5 Gln Pro Pro Ser Val      10 Ser Gly Ala Pro Gly Gln
Arg Val Thr Ile      20 Ser Cys Ser Gly Ser Arg Ser Asn Ile Gly Ala His
Tyr Glu Val Gln Trp Tyr Gln Gln Phe Pro Gly Ala Ala Pro Lys Leu
      35      40      45
Leu Ile Tyr Gly Asp Thr Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
      50      55      60
Ser Ala Ser His Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
      65      70      75      80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Thr Ser
      85      90      95
Leu Arg Gly Pro Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
      100      105      110

```

<210> 100  
 <211> 333

## SeqListing.txt

<212> DNA  
<213> Human

<400> 100

cag tct gtc gtg acg cag ccg ccc tca gtg tct ggg gcc cca ggg cag	48
Gln Ser Val Val Thr 5 Gln Pro Pro Ser Val 10 Ser Gly Ala Pro Gly Gln 15	
agg gtc acc atc tcc tgc act ggg agc agc tcc aac atc ggg aca ggt	96
Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Thr Gly 20 25 30	
tat gat gta cat tgg tac cag cag gtt cca gga tca gcc ccc aaa ctc	144
Tyr Asp Val His Trp Tyr Gln Gln Val Pro Gly Ser Ala Pro Lys Leu 35 40 45	
ctc atc tat gct tac acc aat cgg ccc tca ggg gtc cct gac cga ttc	192
Leu Ile Tyr Ala Tyr Thr Asn Arg Pro Ser Gly Val Pro Asp Arg Phe 50 55 60	
tct ggc tcc aag tct ggc atg tca gcc tcc ctg gtc atc ggt ggt ctc	240
Ser Gly Ser Lys Ser Gly Met Ser Ala Ser Leu Val Ile Gly Gly Leu 65 70 75 80	
cag gct gag gat gag gct gat tat tac tgc cag tcc ttt gac gac agc	288
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Phe Asp Asp Ser 85 90 95	
ctg aat ggt ctt gtc ttc gga cct ggg acc tcg gtc acc gtc ctc	333
Leu Asn Gly Leu Val Phe Gly Pro Gly Thr Ser Val Thr Val Leu 100 105 110	

<210> 101  
<211> 111  
<212> PRT  
<213> Human

<400> 101

Gln Ser Val Val Thr 5 Gln Pro Pro Ser Val 10 Ser Gly Ala Pro Gly Gln 15
Arg Val Thr Ile Ser Cys Thr Gly Ser 25 Ser Ser Asn Ile Gly Thr Gly 20 30
Tyr Asp Val His Trp Tyr Gln Gln Val Pro Gly Ser Ala Pro Lys Leu 35 40 45
Leu Ile Tyr Ala Tyr Thr Asn Arg Pro Ser Gly Val Pro Asp Arg Phe 50 55 60
Ser Gly Ser Lys Ser Gly Met Ser Ala Ser Leu Val Ile Gly Gly Leu 65 70 75 80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Phe Asp Asp Ser 85 90 95
Leu Asn Gly Leu Val Phe Gly Pro Gly Thr Ser Val Thr Val Leu 100 105 110

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<400> 102

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Gln Ser Val Leu Thr 5 Gln Pro Pro Ser Val 10 Ser Gly Ala Pro Gly Gln 15	
agg gtc acc atc tcc tgc act ggg agc cac tcc aac ttc ggg gca ggt	96
Arg Val Thr Ile Ser Cys Thr Gly Ser His Ser Asn Phe Gly Ala Gly 20 25 30	
act gat gtc cat tgg tac caa cac ctt cca gga aca gcc ccc aga ctc	144

## SeqListing.txt

Thr	Asp	Val	His	Trp	Tyr	Gln	His	Leu	Pro	Gly	Thr	Ala	Pro	Arg	Leu	
		35					40					45				
ctc	att	cat	gga	gac	act	cat	cgg	ccc	tcc	ggg	gtc	gct	gac	cga	ttc	192
Leu	Ile	His	Gly	Asp	Thr	His	Arg	Pro	Ser	Gly	Val	Ala	Asp	Arg	Phe	
		50				55					60					
tct	ggc	tcc	agg	tct	ggc	gcc	tca	gcc	tcc	ctg	gcc	atc	act	ggg	ctc	240
Ser	Gly	Ser	Arg	Ser	Gly	Ala	Ser	Ala	Ser	Leu	Ala	Ile	Thr	Gly	Leu	
		65			70					75					80	
cgg	gtt	gag	gat	gag	gct	gat	tat	tac	tgt	cag	tcg	tat	gac	tat	ggc	288
Arg	Val	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Gln	Ser	Tyr	Asp	Tyr	Gly	
				85					90					95		
ctg	aga	ggg	tgg	gtg	ttc	ggc	ggc	ggg	acc	aag	ctg	acc	gtc	ctt		333
Leu	Arg	Gly	Trp	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu		
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<400> 103

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Arg	Val	Thr	Ile	Ser	Cys	Thr	Gly	Ser	His	Ser	Asn	Phe	Gly	Ala	Gly	
			20					25					30			
Thr	Asp	Val	His	Trp	Tyr	Gln	His	Leu	Pro	Gly	Thr	Ala	Pro	Arg	Leu	
		35					40					45				
Leu	Ile	His	Gly	Asp	Thr	His	Arg	Pro	Ser	Gly	Val	Ala	Asp	Arg	Phe	
		50				55					60					
Ser	Gly	Ser	Arg	Ser	Gly	Ala	Ser	Ala	Ser	Leu	Ala	Ile	Thr	Gly	Leu	
		65			70					75					80	
Arg	Val	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Gln	Ser	Tyr	Asp	Tyr	Gly	
			85						90					95		
Leu	Arg	Gly	Trp	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu		
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<400> 104

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				5					10					15		
gac	aga	gtc	acc	atc	act	tgt	cgg	gcg	agt	cag	ggg	att	gac	aac	tgg	96
Asp	Arg	Val	Thr	Ile	Thr	Cys	Arg	Ala	Ser	Gln	Gly	Ile	Asp	Asn	Trp	
			20					25					30			
tta	ggc	tgg	tat	cag	cag	aaa	cct	ggg	aaa	gcc	cct	aaa	ctc	ctg	atc	144
Leu	Gly	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Leu	Leu	Ile	
		35				40						45				
tac	gat	gca	tcc	aat	ttg	gac	aca	ggg	gtc	cca	tca	agg	ttc	agt	gga	192
Tyr	Asp	Ala	Ser	Asn	Leu	Asp	Thr	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly	
		50				55				60						
agt	gga	tct	ggg	aca	tat	ttt	act	ctc	acc	atc	agt	agc	ctg	caa	gct	240
Ser	Gly	Ser	Gly	Thr	Tyr	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Ala	
		65			70					75					80	
gaa	gat	ttt	gca	gtt	tat	ttc	tgt	caa	cag	gct	aaa	gct	ttt	cct	ccc	288
Glu	Asp	Phe	Ala	Val	Tyr	Phe	Cys	Gln	Gln	Ala	Lys	Ala	Phe	Pro	Pro	
			85						90					95		
act	ttc	ggc	gga	ggg	acc	aag	gtg	gac	atc	aaa						321

Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys  
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<400> 105

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Ile Gly  
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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Asp Asn Trp  
20 25 30  
Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
35 40 45  
Tyr Asp Ala Ser Asn Leu Asp Thr Gly Val Pro Ser Arg Phe Ser Gly  
50 55 60  
Ser Gly Ser Gly Thr Tyr Phe Thr Leu Thr Ile Ser Ser Leu Gln Ala  
65 70 75 80  
Glu Asp Phe Ala Val Tyr Phe Cys Gln Gln Ala Lys Ala Phe Pro Pro  
85 90 95  
Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys  
100 105

<210> 106  
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Thr Gly Ser His Ser Asn Phe Gly Ala Gly Thr Asp Val  
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<400> 107

Gly Asp Ser Asn Arg Pro Ser  
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<210> 108  
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<400> 108

Gln Ser Tyr Asp Tyr Gly Leu Arg Gly Trp Val  
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<210> 109  
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Arg Ala Ser Gln Asn Ile Asn Asn Tyr Leu Asn  
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## SeqListing.txt

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Gln Gln Tyr Ser Arg Tyr Pro Pro Thr
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Thr Gly Ser Ser Thr Asp Val Gly Asn Tyr Asn Tyr Ile Ser
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Asp Val Thr Ser Arg Pro Ser
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Asn Ser Tyr Ser Ala Thr Asp Thr Leu Val
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Thr Gly Gln Ser Ser Asn Ile Gly Ala Asp Tyr Asp Val His
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Gly His Asn Asn Arg Pro Ser
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SeqListing.txt

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Ala Ala Ser Leu Leu Gln Ser  
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<210> 120

<211> 9

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<400> 120

Gln Gln Ala Asp Ser Phe Pro Pro Thr  
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<210> 121

<211> 11

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Arg Ala Ser Gln Ser Ile Lys Arg Trp Leu Ala  
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Ala Ala Ser Thr Leu Gln Ser  
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Gln Gln Ala Asn Ser Phe Pro Pro Thr  
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<210> 124

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# SeqListing.txt

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Gly Asp Thr Asn Arg Pro Ser  
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Gln Ser Tyr Asp Thr Ser Leu Arg Gly Pro Val  
5 10

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Thr Gly Ser Ser Ser Asn Ile Gly Thr Gly Tyr Asp Val His  
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Ala Tyr Thr Asn Arg Pro Ser  
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Gln Ser Phe Asp Asp Ser Leu Asn Gly Leu Val  
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Thr Gly Ser His Ser Asn Phe Gly Ala Gly Thr Asp Val His  
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## SeqListing.txt

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Arg Ala Ser Gln Gly Ile Asp Asn Trp Leu Gly  
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Asp Ala Ser Asn Leu Asp Thr  
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<210> 135  
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Gln Gln Ala Lys Ala Phe Pro Pro Thr  
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<400> 136

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atg cag agc aag gtg ctg ctg gcc gtc gcc ctg tgg ctc tgc gtg gag	107
Met Gln Ser Lys Val Leu Leu Ala Val Ala Leu Trp Leu Cys Val Glu	
5 10 15	
acc cgg gcc gcc tct gtg ggt ttg cct agt gtt tct ctt gat ctg ccc	155
Thr Arg Ala Ala Ser Val Gly Leu Pro Ser Val Ser Leu Asp Leu Pro	
20 25 30	
agg ctc agc ata caa aaa gac ata ctt aca att aag gct aat aca act	203
Arg Leu Ser Ile Gln Lys Asp Ile Leu Thr Ile Lys Ala Asn Thr Thr	
35 40 45	
ctt caa att act tgc agg gga cag agg gac ttg gac tgg ctt tgg ccc	251
Leu Gln Ile Thr Cys Arg Gly Gln Arg Asp Leu Asp Trp Leu Trp Pro	
50 55 60	
aat aat cag agt ggc agt gag caa agg gtg gag gtg act gag tgc agc	299
Asn Asn Gln Ser Gly Ser Glu Gln Arg Val Glu Val Thr Glu Cys Ser	
65 70 75 80	
gat ggc ctc ttc tgt aag aca ctc aca att cca aaa gtg atc gga aat	347

## SeqListing.txt

Asp	Gly	Leu	Phe	Cys	Lys	Thr	Leu	Thr	Ile	Pro	Lys	Val	Ile	Gly	Asn	
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Asp	Thr	Gly	Ala	Tyr	Lys	Cys	Phe	Tyr	Arg	Glu	Thr	Asp	Leu	Ala	Ser	
gtc	att	tat	gtc	tat	gtt	caa	gat	tac	aga	tct	cca	ttt	att	gct	tct	443
Val	Ile	Tyr	Val	Tyr	Val	Gln	Asp	Tyr	Arg	Ser	Pro	Phe	Ile	Ala	Ser	
gtt	agt	gac	caa	cat	gga	gtc	gtg	tac	att	act	gag	aac	aaa	aac	aaa	491
Val	Ser	Asp	Gln	His	Gly	Val	Val	Tyr	Ile	Thr	Glu	Asn	Lys	Asn	Lys	
act	gtg	gtg	att	cca	tgt	ctc	ggg	tcc	att	tca	aat	ctc	aac	gtg	tca	539
Thr	Val	Val	Ile	Pro	Cys	Leu	Gly	Ser	Ile	Ser	Asn	Leu	Asn	Val	Ser	
ctt	tgt	gca	aga	tac	cca	gaa	aag	aga	ttt	gtt	cct	gat	ggt	aac	aga	587
Leu	Cys	Ala	Arg	Tyr	Pro	Glu	Lys	Arg	Phe	Val	Pro	Asp	Gly	Asn	Arg	
att	tcc	tgg	gac	agc	aag	aag	ggc	ttt	act	att	ccc	agc	tac	atg	atc	635
Ile	Ser	Trp	Asp	Ser	Lys	Lys	Gly	Phe	Thr	Ile	Pro	Ser	Tyr	Met	Ile	
agc	tat	gct	ggc	atg	gtc	ttc	tgt	gaa	gca	aaa	att	aat	gat	gaa	agt	683
Ser	Tyr	Ala	Gly	Met	Val	Phe	Cys	Glu	Ala	Lys	Ile	Asn	Asp	Glu	Ser	
tac	cag	tct	att	atg	tac	ata	gtt	gtc	gtt	gta	ggg	tat	agg	att	tat	731
Tyr	Gln	Ser	Ile	Met	Tyr	Ile	Val	Val	Val	Val	Gly	Tyr	Arg	Ile	Tyr	
gat	gtg	gtt	ctg	agt	ccg	tct	cat	gga	att	gaa	cta	tct	gtt	gga	gaa	779
Asp	Val	Val	Leu	Ser	Pro	Ser	His	Gly	Ile	Glu	Leu	Ser	Val	Gly	Glu	
aag	ctt	gtc	tta	aat	tgt	aca	gca	aga	act	gaa	cta	aat	gtg	ggg	att	827
Lys	Leu	Val	Leu	Asn	Cys	Thr	Ala	Arg	Thr	Glu	Leu	Asn	Val	Gly	Ile	
gac	ttc	aac	tgg	gaa	tac	cct	tct	tgc	aag	cat	cag	cat	aag	aaa	ctt	875
Asp	Phe	Asn	Trp	Glu	Tyr	Pro	Ser	Ser	Lys	His	Gln	His	Lys	Lys	Leu	
gta	aac	cga	gac	cta	aaa	acc	cag	tct	ggg	agt	gag	atg	aag	aaa	ttt	923
Val	Asn	Arg	Asp	Leu	Lys	Thr	Gln	Ser	Gly	Ser	Glu	Met	Lys	Lys	Phe	
ttg	agc	acc	tta	act	ata	gat	ggg	gta	acc	cgg	agt	gac	caa	gga	ttg	971
Leu	Ser	Thr	Leu	Thr	Ile	Asp	Gly	Val	Thr	Arg	Ser	Asp	Gln	Gly	Leu	
tac	acc	tgt	gca	gca	tcc	agt	ggg	ctg	atg	acc	aag	aag	aac	agc	aca	1019
Tyr	Thr	Cys	Ala	Ala	Ser	Ser	Gly	Leu	Met	Thr	Lys	Lys	Asn	Ser	Thr	
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Phe	Val	Arg	Val	His	Glu	Lys	Pro	Phe	Val	Ala	Phe	Gly	Ser	Gly	Met	
gaa	tct	ctg	gtg	gaa	gcc	acg	gtg	ggg	gag	cgt	gtc	aga	atc	cct	gcg	1115
Glu	Ser	Leu	Val	Glu	Ala	Thr	Val	Gly	Glu	Arg	Val	Arg	Ile	Pro	Ala	
aag	tac	ctt	ggg	tac	cca	ccc	cca	gaa	ata	aaa	tgg	tat	aaa	aat	gga	1163
Lys	Tyr	Leu	Gly	Tyr	Pro	Pro	Pro	Glu	Ile	Lys	Trp	Tyr	Lys	Asn	Gly	
ata	ccc	ctt	gag	tcc	aat	cac	aca	att	aaa	gcg	ggg	cat	gta	ctg	acg	1211
Ile	Pro	Leu	Glu	Ser	Asn	His	Thr	Ile	Lys	Ala	Gly	His	Val	Leu	Thr	
att	atg	gaa	gtg	agt	gaa	aga	gac	aca	gga	aat	tac	act	gtc	atc	ctt	1259
Ile	Met	Glu	Val	Ser	Glu	Arg	Asp	Thr	Gly	Asn	Tyr	Thr	Val	Ile	Leu	
acc	aat	ccc	att	tca	aag	gag	aag	cag	agc	cat	gtg	gtc	tct	ctg	gtt	1307
Thr	Asn	Pro	Ile	Ser	Lys	Glu	Lys	Gln	Ser	His	Val	Val	Ser	Leu	Val	
gtg	tat	gtc	cca	ccc	cag	att	ggg	gag	aaa	tct	cta	atc	tct	cct	gtg	1355

## SeqListing.txt

Val	Tyr	Val	Pro	Pro	Gln	Ile	Gly	Glu	Lys	Ser	Leu	Ile	Ser	Pro	Val		
			420					425					430				
gat	tcc	tac	cag	tac	ggc	acc	act	caa	acg	ctg	aca	tgt	acg	gtc	tat	1403	
Asp	Ser	Tyr	Gln	Tyr	Gly	Thr	Thr	Gln	Thr	Leu	Thr	Cys	Thr	Val	Tyr		
		435					440					445					
gcc	att	cct	ccc	ccg	cat	cac	atc	cac	tgg	tat	tgg	cag	ttg	gag	gaa	1451	
Ala	Ile	Pro	Pro	Pro	His	His	Ile	His	Trp	Tyr	Trp	Gln	Leu	Glu	Glu		
		450					455					460					
gag	tgc	gcc	aac	gag	ccc	agc	cat	gct	gtc	tca	gtg	aca	aac	cca	tac	1499	
Glu	Cys	Ala	Asn	Glu	Pro	Ser	His	Ala	Val	Ser	Val	Thr	Asn	Pro	Tyr		
		465			470					475					480		
cct	tgt	gaa	gaa	tgg	aga	agt	gtg	gag	gac	ttc	cag	gga	gga	aat	aaa	1547	
Pro	Cys	Glu	Glu	Trp	Arg	Ser	Val	Glu	Asp	Phe	Gln	Gly	Gly	Asn	Lys		
				485					490					495			
att	gaa	gtt	aat	aaa	aat	caa	ttt	gct	cta	att	gaa	gga	aaa	aac	aaa	1595	
Ile	Glu	Val	Asn	Lys	Asn	Gln	Phe	Ala	Leu	Ile	Glu	Gly	Lys	Asn	Lys		
			500					505					510				
act	gta	agt	acc	ctt	gtt	atc	caa	gcg	gca	aat	gtg	tca	gct	ttg	tac	1643	
Thr	Val	Ser	Thr	Leu	Val	Ile	Gln	Ala	Ala	Asn	Val	Ser	Ala	Leu	Tyr		
			515				520						525				
aaa	tgt	gaa	gcg	gtc	aac	aaa	gtc	ggg	aga	gga	gag	agg	gtg	atc	tcc	1691	
Lys	Cys	Glu	Ala	Val	Asn	Lys	Val	Gly	Arg	Gly	Glu	Arg	Val	Ile	Ser		
		530				535					540						
ttc	cac	gtg	acc	agg	ggt	cct	gaa	att	act	ttg	caa	cct	gac	atg	cag	1739	
Phe	His	Val	Thr	Arg	Gly	Pro	Glu	Ile	Thr	Leu	Gln	Pro	Asp	Met	Gln		
		545			550					555					560		
ccc	act	gag	cag	gag	agc	gtg	tct	ttg	tgg	tgc	act	gca	gac	aga	tct	1787	
Pro	Thr	Glu	Gln	Glu	Ser	Val	Ser	Leu	Trp	Cys	Thr	Ala	Asp	Arg	Ser		
				565					570					575			
acg	ttt	gag	aac	ctc	aca	tgg	tac	aag	ctt	ggc	cca	cag	cct	ctg	cca	1835	
Thr	Phe	Glu	Asn	Leu	Thr	Trp	Tyr	Lys	Leu	Gly	Pro	Gln	Pro	Leu	Pro		
			580					585					590				
atc	cat	gtg	gga	gag	ttg	ccc	aca	cct	gtt	tgc	aag	aac	ttg	gat	act	1883	
Ile	His	Val	Gly	Glu	Leu	Pro	Thr	Pro	Val	Cys	Lys	Asn	Leu	Asp	Thr		
			595				600					605					
ctt	tgg	aaa	ttg	aat	gcc	acc	atg	ttc	tct	aat	agc	aca	aat	gac	att	1931	
Leu	Trp	Lys	Leu	Asn	Ala	Thr	Met	Phe	Ser	Asn	Ser	Thr	Asn	Asp	Ile		
		610				615						620					
ttg	atc	atg	gag	ctt	aag	aat	gca	tcc	ttg	cag	gac	caa	gga	gac	tat	1979	
Leu	Ile	Met	Glu	Leu	Lys	Asn	Ala	Ser	Leu	Gln	Asp	Gln	Gly	Asp	Tyr		
		625				630				635					640		
gtc	tgc	ctt	gct	caa	gac	agg	aag	acc	aag	aaa	aga	cat	tgc	gtg	gtc	2027	
Val	Cys	Leu	Ala	Gln	Asp	Arg	Lys	Thr	Lys	Lys	Arg	His	Cys	Val	Val		
				645					650					655			
agg	cag	ctc	aca	gtc	cta	gag	cgt	gtg	gca	ccc	acg	atc	aca	gga	aac	2075	
Arg	Gln	Leu	Thr	Val	Leu	Glu	Arg	Val	Ala	Pro	Thr	Ile	Thr	Gly	Asn		
			660					665					670				
ctg	gaa	aat	cag	aca	agt	att	ggg	gaa	agc	atc	gaa	gtc	tca	tgc		2123	
Leu	Glu	Asn	Gln	Thr	Thr	Ser	Ile	Gly	Glu	Ser	Ile	Glu	Val	Ser	Cys		
			675				680					685					
acg	gca	tct	ggg	aat	ccc	cct	cca	cag	atc	atg	tgg	tat	aaa	gat	aat	2171	
Thr	Ala	Ser	Gly	Asn	Pro	Pro	Pro	Gln	Ile	Met	Trp	Phe	Lys	Asp	Asn		
			690			695					700						
gag	acc	ctt	gta	gaa	gac	tca	ggc	att	gta	ttg	aag	gat	ggg	aac	cgg	2219	
Glu	Thr	Leu	Val	Glu	Asp	Ser	Gly	Ile	Val	Leu	Lys	Asp	Gly	Asn	Arg		
					710					715					720		
aac	ctc	act	atc	cgc	aga	gtg	agg	aag	gag	gac	gaa	ggc	ctc	tac	acc	2267	
Asn	Leu	Thr	Ile	Arg	Arg	Val	Arg	Lys	Glu	Asp	Glu	Gly	Leu	Tyr	Thr		
				725					730					735			
tgc	cag	gca	tgc	agt	gtt	ctt	ggc	tgt	gca	aaa	gtg	gag	gca	ttt	ttc	2315	
Cys	Gln	Ala	Cys	Ser	Val	Leu	Gly	Cys	Ala	Lys	Val	Glu	Ala	Phe	Phe		
			740					745					750				
ata	ata	gaa	ggt	gcc	cag	gaa	aag	acg	aac	ttg	gaa					2351	

## SeqListing.txt

Ile Ile Glu Gly Ala Gln Glu Lys Thr Asn Leu Glu  
755 760

<210> 137  
<211> 764  
<212> PRT  
<213> Human

<400> 137

Met Gln Ser Lys Val<sub>5</sub> Leu Leu Ala Val<sub>10</sub> Ala Leu Trp Leu Cys Val<sub>15</sub> Glu  
Thr Arg Ala Ala<sub>20</sub> Ser Val Gly Leu Pro<sub>25</sub> Ser Val Ser Leu Asp<sub>30</sub> Leu Pro  
Arg Leu Ser<sub>35</sub> Ile Gln Lys Asp<sub>40</sub> Ile Leu Thr Ile Lys Ala<sub>45</sub> Asn Thr Thr  
Leu Gln Ile Thr Cys Arg Gly<sub>55</sub> Gln Arg Asp Leu Asp<sub>60</sub> Trp Leu Trp Pro  
Asn Asn Gln Ser Gly Ser<sub>70</sub> Glu Gln Arg Val Glu<sub>75</sub> Val Thr Glu Cys Ser<sub>80</sub>  
Asp Gly Leu Phe Cys<sub>85</sub> Lys Thr Leu Thr Ile<sub>90</sub> Pro Lys Val Ile Gly<sub>95</sub> Asn  
Asp Thr Gly Ala Tyr Lys Cys Phe Tyr<sub>105</sub> Arg Glu Thr Asp Leu Ala Ser<sub>110</sub>  
Val Ile Tyr Val Tyr Val Gln Asp<sub>120</sub> Tyr Arg Ser Pro Phe Ile Ala Ser<sub>125</sub>  
Val Ser Asp Gln His Gly Val Val Tyr Ile Thr Glu Asn Lys Asn Lys  
Thr Val Val Ile Pro Cys<sub>150</sub> Leu Gly Ser Ile Ser<sub>155</sub> Asn Leu Asn Val Ser<sub>160</sub>  
Leu Cys Ala Arg Tyr<sub>165</sub> Pro Glu Lys Arg Phe Val Pro Asp Gly Asn Arg<sub>175</sub>  
Ile Ser Trp Asp Ser Lys Lys Gly Phe Thr Ile Pro Ser Tyr Met Ile  
Ser Tyr Ala Gly Met Val Phe Cys<sub>200</sub> Glu Ala Lys Ile Asn Asp Glu Ser  
Tyr Gln Ser Ile Met Tyr Ile Val Val Val Val Gly Tyr Arg Ile Tyr  
Asp Val Val Leu Ser Pro Ser His Gly Ile Glu Leu Ser Val Gly Glu  
225 230 235 240  
Lys Leu Val Leu Asn Cys Thr Ala Arg Thr Glu Leu Asn Val Gly Ile  
245 250 255  
Asp Phe Asn Trp Glu Tyr Pro Ser Ser Lys His Gln His Lys Lys Leu  
260 265 270  
Val Asn Arg Asp Leu Lys Thr Gln Ser Gly Ser Glu Met Lys Lys Phe  
275 280 285  
Leu Ser Thr Leu Thr Ile Asp Gly Val Thr Arg Ser Asp Gln Gly Leu  
290 295 300  
Tyr Thr Cys Ala Ala Ser Ser Gly Leu Met Thr Lys Lys Asn Ser Thr  
305 310 315 320  
Phe Val Arg Val His Glu Lys Pro Phe Val Ala Phe Gly Ser Gly Met  
325 330 335  
Glu Ser Leu Val Glu Ala Thr Val Gly Glu Arg Val Arg Ile Pro Ala  
340 345 350  
Lys Tyr Leu Gly Tyr Pro Pro Pro Glu Ile Lys Trp Tyr Lys Asn Gly  
355 360 365  
Ile Pro Leu Glu Ser Asn His Thr Ile Lys Ala Gly His Val Leu Thr  
370 375 380  
Ile Met Glu Val Ser Glu Arg Asp Thr Gly Asn Tyr Thr Val Ile Leu  
385 390 395 400  
Thr Asn Pro Ile Ser Lys Glu Lys Gln Ser His Val Val Ser Leu Val  
405 410 415  
Val Tyr Val Pro Pro Gln Ile Gly Glu Lys Ser Leu Ile Ser Pro Val  
420 425 430

## SeqListing.txt

Asp Ser Tyr Gln Tyr Gly Thr Thr Gln Thr Leu Thr Cys Thr Val Tyr  
 435 440 445  
 Ala Ile Pro Pro Pro His His Ile His Trp Tyr Trp Gln Leu Glu Glu  
 450 455 460  
 Glu Cys Ala Asn Glu Pro Ser His Ala Val Ser Val Thr Asn Pro Tyr  
 465 470 475 480  
 Pro Cys Glu Glu Trp Arg Ser Val Glu Asp Phe Gln Gly Gly Asn Lys  
 485 490 495  
 Ile Glu Val Asn Lys Asn Gln Phe Ala Leu Ile Glu Gly Lys Asn Lys  
 500 505 510  
 Thr Val Ser Thr Leu Val Ile Gln Ala Ala Asn Val Ser Ala Leu Tyr  
 515 520 525  
 Lys Cys Glu Ala Val Asn Lys Val Gly Arg Gly Glu Arg Val Ile Ser  
 530 535 540  
 Phe His Val Thr Arg Gly Pro Glu Ile Thr Leu Gln Pro Asp Met Gln  
 545 550 555 560  
 Pro Thr Glu Gln Glu Ser Val Ser Leu Trp Cys Thr Ala Asp Arg Ser  
 565 570 575  
 Thr Phe Glu Asn Leu Thr Trp Tyr Lys Leu Gly Pro Gln Pro Leu Pro  
 580 585 590  
 Ile His Val Gly Glu Leu Pro Thr Pro Val Cys Lys Asn Leu Asp Thr  
 595 600 605  
 Leu Trp Lys Leu Asn Ala Thr Met Phe Ser Asn Ser Thr Asn Asp Ile  
 610 615 620  
 Leu Ile Met Glu Leu Lys Asn Ala Ser Leu Gln Asp Gln Gly Asp Tyr  
 625 630 635 640  
 Val Cys Leu Ala Gln Asp Arg Lys Thr Lys Lys Arg His Cys Val Val  
 645 650 655  
 Arg Gln Leu Thr Val Leu Glu Arg Val Ala Pro Thr Ile Thr Gly Asn  
 660 665 670  
 Leu Glu Asn Gln Thr Thr Ser Ile Gly Glu Ser Ile Glu Val Ser Cys  
 675 680 685  
 Thr Ala Ser Gly Asn Pro Pro Pro Gln Ile Met Trp Phe Lys Asp Asn  
 690 695 700  
 Glu Thr Leu Val Glu Asp Ser Gly Ile Val Leu Lys Asp Gly Asn Arg  
 705 710 715 720  
 Asn Leu Thr Ile Arg Arg Val Arg Lys Glu Asp Glu Gly Leu Tyr Thr  
 725 730 735  
 Cys Gln Ala Cys Ser Val Leu Gly Cys Ala Lys Val Glu Ala Phe Phe  
 740 745 750  
 Ile Ile Glu Gly Ala Gln Glu Lys Thr Asn Leu Glu  
 755 760